Remarks

Applicant thanks the Examiner for the Examiner's careful review of the application.

Applicant notes with approval that claims 2-4 have been identified as being allowable. Applicant thanks the Examiner.

Claim 1 has been amended to address technical points, and has not been narrowed. Claim 7 has been added. Claims 1-7 are currently pending in this application.

Objections to the Drawings

Figures 6 and 7 were objected to, because they should have been labeled as "Prior Art." Figures 6 and 7 have been amended herein to comply with the Examiner's suggestion.

Objections to Claim 1

Claim 1 was objected to for the following reasons:

- "a voltage output" should have read --an output voltage--.
- "a reverse" should have read --an inverted--.
- "the current" should have read --a current--.
- "the two inputs" should have read --the inverted inputs--.

Claim 1 has been amended herein to comply with the Examiner's suggestion. The amendment of claim 1 is technical in nature and does not narrow or otherwise alter the scope of claim 1.

Rejection of Claims 1, 5, and 6 under 35 U.S.C. §102(b)

Independent claim 1 (and its dependent claims 5 and 6) was rejected under 35 U.S.C. §102(b), as being anticipated by United States Patent No. 6,285,256 (Wong). Applicants respectfully traverse this rejection.

The present invention, as set forth in the claims, is directed toward a unity gain amplifier that receives an input voltage and drives an output voltage. Whenever the input voltage changes relative to the output voltage, the unity gain amplifier has the ability to drive a load from either a high voltage to a low voltage or from a low voltage to a high

voltage to minimize the voltage difference between the input and output. However, the driving circuit charges/discharge the output load (which is typically a capacitor) at a predetermined rate. Thus, it exhibits a defined rise time and fall time.

An accelerator circuit is used to reduce the rise or fall time. In other words, when the driving circuit sources current to the output load, the accelerator circuit "accelerates" the process by also supplying current thereto. When the driving circuit sinks current from the load, the accelerator accelerates the process by also sinking current therefrom. Hence, claim 1 requires an "output acceleration means." Wong fails to disclose such a feature.

Wong shows a unity gain amplifier. However, Wong is directed toward a push-pull output driver. For the sake of clarity, Figure 3 of Wong is presented herein as Figure A (Figure 3 of Wong has been amended herein to include a heavy dashed line that divides the lower portion of the figure from the upper portion).

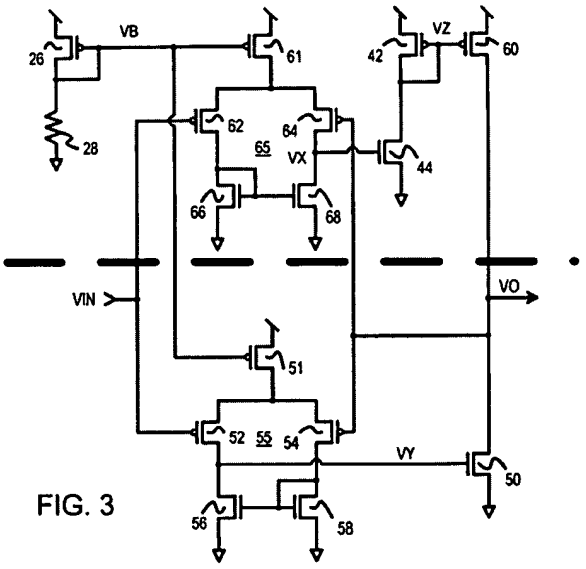

FIG. 3

Figure A.

The premise of the office action is that the circuitry above the dashed line functions as an accelerator, and assists the circuitry below the dashed line in sinking or sourcing current to the output load. This premise is false. Briefly, the circuitry above the heavy dashed line in Figure 3 of Wong is responsible for elevating the output voltage (VO), and does so by pushing current to the output load. Conversely, the circuitry below

the heavy dashed line is responsible for reducing the output voltage, and does so by pulling current from the output load.

Stated another way, the circuitry above the dashed line does not function to accelerate the sourcing or sinking action of the circuitry below the dashed line, as advanced in the Office Action. Instead the circuitry above the dashed line plays a complimentary role to the circuitry below the dashed line. The circuitry above the dashed line functions only to source current to the output load; the circuitry below the dashed line functions only to sink current from the output load.

The Examiner may verify Applicant's representations regarding the operation of the circuitry of Wong based on the following detailed explanation. The circuit of Wong is primarily a combination of two voltage follower circuits. The first voltage follower circuit drives the p-channel transistor (60) and the second voltage follower drives the n-channel transistor (50). The first voltage follower for driving the p-channel transistor (60) is comprised of an inverting amplifier with the positive input thereof connected to VIN on the gate of transistor (62). The negative input thereof is connected to the output voltage VO. An inverter is provided on the output in the form of the n-channel transistor (44) and the diode-connected p-channel transistor (42). Therefore, when VIN increases in voltage, VX rises, turning on transistor (44) and pulling down the gate of transistor (60) at the voltage VZ. This causes the output voltage VO to rise. The output VO will be pulled up to a voltage that is substantially equal to VIN to maintain the current through transistors (62) and (64) substantially equal. However, this portion of the circuit only pulls VO up when VIN is above VO. The second voltage following circuit is provided by the differential transistors (52) and (54). VIN is input to the negative input on the gate of transistor (52) with a positive input on the gate of transistor (54) connected to the output voltage VO. The output of this amplifier drives the gate of the n-channel transistor (50). Therefore, when VIN goes above VO, node VY will be pulled low, thus turning off transistor (50). When VIN falls below VO, node VY will go high, turning on transistor (50), thus pulling VO low. Thus, VO will be pulled low until VO is substantially equal to VIN, at which time transistor (50) will be turned off. Thus, the rise time of the circuit in *Wong* will be defined by the current through transistor (60) and the transconductance thereof for driving the capacity low. The fall time will be governed by

the transconductance of transistor (50). There is no circuitry disclosed in Wong for increasing or decreasing either the rise or fall times by introducing a current into the output node when a predetermined voltage difference exists between the input and output voltage. Thus, Applicant believes that Wong does not anticipate or obviate Applicant's Claims as set forth in the original Application.

Because Wong fails to teach an output acceleration means, as required by claim 1, the rejection of claim 1 is improper and should be withdrawn. Claims 5 and 6 are allowable by virtue of their dependence on claim 1, and the rejection of these claims should also be withdrawn.

Claim 7

Applicant takes this opportunity to state that independent claim 7 is allowable for at least the same reason that independent claim 1 is allowable.

Summary

Applicant has now made an earnest attempt in order to place this case in condition for allowance. For the reasons stated above, Applicant respectfully requests full allowance of the claims as amended. Please charge any additional fees or deficiencies in fees or credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

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Amendments to the Drawings

The attached sheet of drawings includes changes to Figures 6 and 7. This sheet, which includes Figures 6 and 7, replaces the original sheet including Figures 6 and 7. Figures 6 and 7 have been amended to be labeled "Prior Art."

Attachment: Replacement Sheet